PRODUCTION & OPERATIONS MANAGEMENT

DEGREE COURSE YEAR: Third
1º SEMESTER ☒  2º SEMESTER ☐
CATEGORY: ☒ BASIC  ☐ COMPULSORY  ☐ OPTIONAL
NO. OF CREDITS (ECTS): 6
LANGUAGE: ENGLISH
PREREQUISITES: NONE

1. SUBJECT DESCRIPTION

Production and Operations Management is the area that deals with the production of goods and services. It is concerned with managing the process that converts inputs, such as material and labor, into output, such as products and services. Thus, it is an important function in every company. An effective and efficient operations management can help a company stay competitive. Successful companies generally practice successful operations management, while a company struggling to make profit often can trace their problems to poor management of their operations.

An effective Operations Management interacts with various functions in a firm, such as Accounting, Marketing, and Information Technology. A well-run establishment requires that these functions are integrated and consistent with the overall strategy of the firm. This means that every manager, irrespective of their department or specialization, will benefit from being familiar with Operations Management. A sound understanding of Operations Management becomes even more important for the professional starting a new business or product line.

2. OBJECTIVES AND SKILLS

The objective of this course is to provide students with knowledge and understanding of concepts in Operations Management (OM). Through case studies, simulations, site visits, and group and individual exercises, you will learn to apply the theory you learn in class to real world scenarios. The course encourages the development of creative thinking, analytical reasoning, people skills and team work in the context of operations management.

The course will also help you:

- Understand the strategic importance of OM and how it can provide firms a competitive advantage
- Analyze the problems and challenges faced by managers that can be traced to ineffective OM
• Learn a framework to articulate the tactical and strategic problems that arise in OM
• Gain understanding of OM principles, concepts, tools, and techniques to diagnose, analyze and solve OM problems
• Know the tools that companies use to control the production chain
• Know the tools to manage the operations of the company (its service and production function)

3. METHODOLOGY AND WEIGHTING

Classes in this course are designed as a combination of lectures and interactive sessions. Lectures for each topic will be followed by application of the theory through in-class case analysis, exercises, and simulations. These activities will not only teach you how to apply OM theory, but also reinforce concepts taught in previous classes.

There will also be two visits to factories where you can see OM principles in context.

4. CONTENT

This course consists of four parts.

I. The first part introduces you to operations management and provides an overview of the process and basic OM concepts and terms.

II. The second part covers Service Operations, how they are designed and the factors that result in successful service delivery.

III. The third part deals in brief with Quality Management and some of the widely used standards in Quality.

IV. The fourth part is Supply Chain Management. In this, you will learn basic concepts in MRP, Inventory Control, SCM practices and the major decisions involved in SCM. You will see lean concepts applied in the service industry.

SESSION 1
Introduction to the Field of Operation Management
Lecture/Discussion
In-class Exercise

SESSION 2
Introduction to Processes
Lecture/Discussion

SESSION 3
Process Analysis
Lecture/Discussion
SESSION 4
Capacity Management
Lecture/Discussion

SESSION 5
Capacity Management (contd)
In-class exercise/Discussion

SESSION 6
Facility Layout
Lecture/Discussion

SESSION 7
Service Operations
Lecture/Discussion

SESSION 8
Service Operations
Lecture/Discussion

SESSION 9
Service Operations
Case/Discussion:

SESSION 10
Quality Management
Lecture/Discussion

SESSION 11
Six Sigma
Lecture/Discussion/Case
In-Class Exercise:
Drawing a Fishbone

SESSION 12 and 13
Site Visit

SESSION 14
Innovation in Product and Service Design
Lecture/Discussion/Test
Test 1:
On topics covered in sessions 1 to 11
SESSION 15  
Sourcing  
Lecture/Discussion

SESSION 16  
Sourcing (contd)  
Lecture/Discussion

SESSION 17  
Location, Logistics, and Distribution  
Lecture/Discussion

SESSION 18  
Inventory Control  
Lecture/Discussion

SESSION 19  
Inventory Control  
Lecture/Discussion/Case

SESSION 20  
MRP  
Lecture/Discussion

SESSION 21  
Just in Time and Lean Manufacturing  
Lecture/Discussion/Test  
Test 2:  
On concepts covered in sessions 10 to 20

SESSION 22  
Just in Time and Lean Manufacturing  
Lecture/Discussion

SESSION 23  
Just in Time and Lean Manufacturing  
Simulation/Lecture/Discussion

SESSION 24  
Lean Practices in the Service Industry  
Lecture/Discussion/Case Discussion
SESSIONS 24 & 25
Site Visit

SESSION 26
Constraint Management
Lecture/Discussion
Submit report on site visit

SESSION 27
Constraint Management
Lecture/Discussion

SESSION 28
Synthesis
Lecture/Discussion/Test

SESSION 29
Guest Speaker

SESSION 30
Group Presentation

5. EVALUATION SYSTEM

ORDINARY EXAMS

Your final grade in the course will be based on both individual and group work. The evaluation is based on:

A. Participation 30%
B. Tests (2 tests, each 12%) 24%
C. Group project 16%
D. Final Exam 30%

A. PARTICIPATION (30%)
   Participation may take one of three forms: In-class, Online, and Homework

IN-CLASS & ONLINE PARTICIPATION (25%)

Four main criteria will be used in evaluating your class participation:

- Depth and Quality of Comments: The most important dimension of participation relates to the content of what you are saying. A high quality comment reveals your understanding and knowledge, your analytical skill, your insight into the topic, and your ability to verbalize your thoughts.
• **Contributing To Your Peers’ Understanding:** An important purpose of class participation is to share ideas and contribute to each other’s understanding of the topic. A high quality presentation of ideas must consider the relevance and timing of comments, and the flow and content of the ensuing class discussion. It demands comments that are concise and clear, and that are conveyed with a spirit of involvement in the discussion at hand.

• **Frequency:** Frequency refers to the number of times you participate in class voluntarily. The more often you speak up, the higher the chances of saying something valuable. However, be careful of not monopolizing the conversation or claiming a higher proportion of “airtime” just for the sake of speaking. Remember, “Quality over Quantity”.

• **Attendance:** A small component of in-class participation is based on attendance. However, being present means being “physically and mentally” present. This means that if you are in class but disengaged, sleepy, or distracted with your cell phone or laptop, then you do not get attendance-participation points.

• **Online Participation:** Students may post articles, readings, analyses related to the topics discussed in class. If they are relevant and add value to the class understanding of the subject, they will be considered for evaluation toward class participation. Students that post articles must be willing and prepared to discuss their posts in class.

**HOMEWORK (5%)**

Students will be assigned homework in some classes that they will need to submit before the beginning of the next class. Students can work on these assignments by themselves or in groups of two.

**B. TESTS (24%)**

There will be two tests conducted during the course. Duration of each test will be 15 minutes and will be conducted at the beginning of the class.

The sessions with the tests are already defined in the syllabus. If a student cannot be present for a test, they will not be given a make-up exam. They will be awarded 60% of the score they obtained in the other test.

**C. FINAL GROUP PROJECT (16%)**

You are also expected to complete a final project with your group. Each group must identify a process within a firm or business that can benefit from applying the OM concepts you’ve learnt in class. The project will give you the opportunity to reflect on what you have learnt in class and apply it to practical problems. You will present the project in class in Session 30, and hand over a written report.

You are expected to hand over a Proposal of your project by Session 18. The Proposal will contain a summary of the process you are analyzing and the means by which you are going to analyze the process.
It is expected that every member of the group contributes equally. To ensure there are no free-riders (i.e. group members that do not work but get the benefit of the points the group earns), one component of the project evaluation will be peer-evaluation. Group members will give each other points for their contribution, which will be a part of the overall project evaluation.

If you find that a group member is not contributing, you must first address the issue with the member. Even after discussing the issue with them, if the group member continues to fall back, please bring it to my attention.

More details on the project evaluation criteria will be provided early on in the course.

D. FINAL EXAM (30%)

On the last day of the course, there will be a final exam. The exam is comprehensive - it will test all the concepts covered in the class, including the topics covered in the first two tests.

RETAKES POLICY

Each student has 4 chances to pass any given course distributed in two consecutive academic years (regular period and July period).

Students who do not comply with the 70% attendance rule will lose their 1st and 2nd chance, and go directly to the 3rd one (they will need to enrol again in this course next academic year).

Grading for retakes will be subject to the following rules:

- Students failing the course in the first regular period will have to do a retake in July (except those not complying with the attendance rules, which are banned from this possibility).
- Dates and location of the July retakes will be posted in advance and will not be changed. Please take this into consideration when planning your summer.
- The retake will consist of a comprehensive exam that covers all concepts, similar to the Final Exam.
  - The non-July retake (students in their third attempt) will also have to take a Comprehensive Final Exam
  - The maximum grade that a student may obtain in the retake will be 8 out of 10.

6. ELECTRONIC DEVICES IN CLASS

Indiscriminate use of electronic devices can be distracting to the class and hinder the process of smooth learning. For this purpose, the following policies will be implemented:

- All cell phones must be turned off and out of sight during class.
- You may use laptops to take notes, perform calculations or do exercises. However you may not use laptops for non-class related activities including sending messages, emails, browsing for non-subject related topics.

Using electronic devices in any manner other than what is permitted will affect your participation points.
7. ATTENDANCE

University policy regarding mandatory attendance states that students should attend to least 70% of the sessions. Only in extremely special cases (i.e. a long illness), the rule can be reconsidered and you should notify the University and me for authorization. If a student exceeds the allowed 30%, he/she will get a 0 in the course. Nevertheless he/she can be allowed to continue the learning process, receive feedback on the class work and take the exams, although this will not change his/her grade.

If a student is absent on the day of a test, they will not be given a make-up exam.

Attendance forms a small component of the total Participation grade.

8. PLAGIARISM

Extract from the IE University Rules:

“Sometimes inexperienced research paper writers find that once they have written their text there are many citations, references to authors or to their ideas that are not properly recorded. Since crediting sources is one of the most important aspects of academic writing this may probably invalidate those parts of their texts or worse, the author may be accused of plagiarism, that is, of presenting the work of another person as if it were his or her own work. In order to avoid this problem, we must learn how to write down all the data about the source.”

How to avoid plagiarism
Find the complete information at: IE University’s Online Campus - Language Center – Documents - “Academic writing. Textbook”, pages 11-16: “How to record a source” and “How to record information from a source”

IE University’s Ethics Code on plagiarism
This code expressly prohibits plagiarism among IE University members. For the purposes of this code, plagiarism means the dishonest practice of presenting the ideas, writings or words of another person as if they were one’s own. Some examples of plagiarism include, but are not limited to, the following:

- Reproducing the exact words of another person without punctuating them in quotation marks and without mentioning the source.
- Reproducing another person’s idea, even if expressed in different words, without mentioning the source.
- Receiving help in academic work (with the teacher's permission) without mentioning such help.

If a student is found guilty of plagiarism or even suspected of plagiarism, I will be obliged to report them to the IE University Ethics Committee.